

Code numbers For Replacement Panels

THE AMERICAN LIBRARY ASSOCIATION
FRANKENSTEIN: PENETRATING THE SECRETS OF NATURE
PANEL 2 SCIENCE AND THE BOUNDARY OF LIFE

FRANKENSTEIN

2A

SCIENCE AND THE BOUNDARY OF LIFE

In her novel, Mary Shelley did not provide detailed descriptions of the precise her protagonist, Victor Frankenstein, and when he "bestowed animation on lifeless matter." But Victor Frankenstein's references to "a spark of being into the lifeless thing" make clear that Mary Shelley, like many of her contemporaries, was fascinated by the boundary between the living and the dead and the scientific search for the principle of life. Frankenstein reflected the interest of early nineteenth-century physicians and natural philosophers in human dissection and experiments on animals, as they explored the possibilities for generating life, reanimating the deceased and the newly dead, and reanimating dead tissue using electricity. These researchers sought to benefit humankind and to end death and disease through their investigations into "the secrets of nature."

2B

Reanimating the Dead

Reanimating those who appeared to be dead interested many people in the nineteenth century. In 1802, in the 17th, "human nature," experimentally demonstrated the possibility for reanimating the dead and the artificial life, including life, "supernatural" of the body, "supernatural" of artificial respiration, and the application of electrical current. These researchers wanted to have used the force of electricity of people, human or divine. These researchers wanted to have used the force of electricity of people, human or divine. These researchers wanted to have used the force of electricity of people, human or divine.

2C

The Spark of Life

What separates the living from the dead? What is the "spark of life"? The answer to these questions was sought by many scientists in the nineteenth century. In 1802, in the 17th, "human nature," experimentally demonstrated the possibility for reanimating the dead and the artificial life, including life, "supernatural" of the body, "supernatural" of artificial respiration, and the application of electrical current. These researchers wanted to have used the force of electricity of people, human or divine. These researchers wanted to have used the force of electricity of people, human or divine.

2D

The Nature of Monsters

In the eighteenth and nineteenth centuries, the concept of "monsters" or "monstrous" was used to describe the nature of human beings who were different from the norm. This concept was used to describe the nature of human beings who were different from the norm. This concept was used to describe the nature of human beings who were different from the norm.

2E

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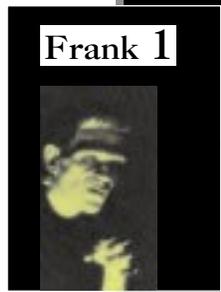
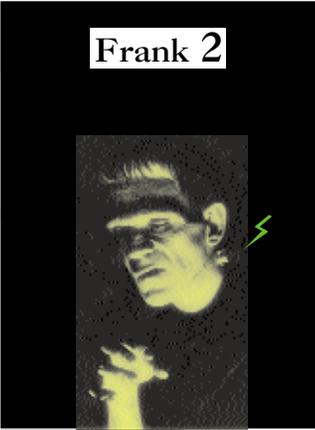
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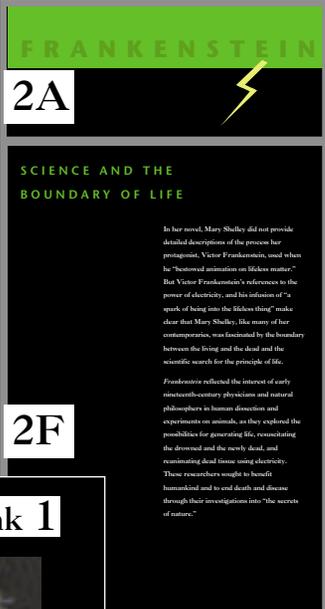
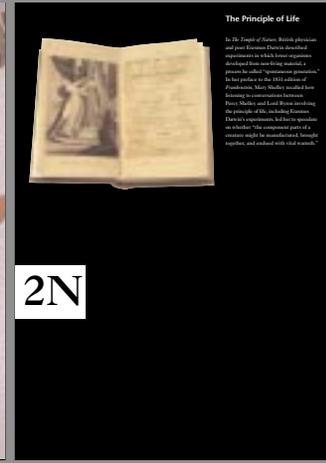
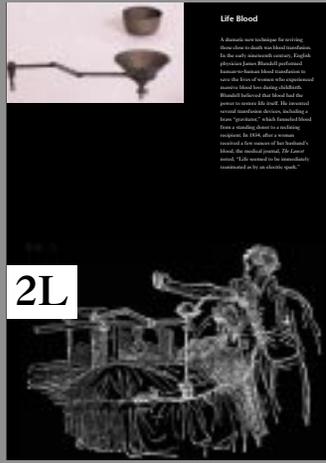
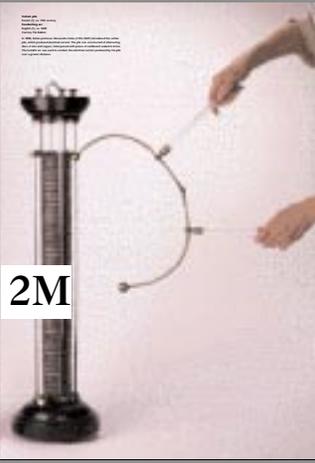
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PENETRATING THE SECRETS OF NATURE

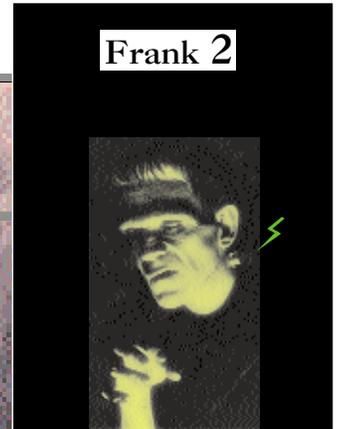
Secret Toil

One of the more interesting elements of the Frankenstein story and one that contrasts with each telling of the life, is Mary Shelley's description of the "secret toil" of Frankenstein's quest to create his creature. The particular focus of Shelley's "secret toil" is the "secret toil" of Frankenstein's quest to create his creature. The particular focus of Shelley's "secret toil" is the "secret toil" of Frankenstein's quest to create his creature.



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THE AMERICAN LIBRARY ASSOCIATION
FRANKENSTEIN: PENETRATING THE SECRETS OF NATURE
 PANEL 3 FINDING FRANKENSTEIN; OR THE MODERN PROMETHEUS



FRANKENSTEIN

3A

FINDING FRANKENSTEIN; OR, THE MODERN PROMETHEUS

Who was Victor Frankenstein? Why did Mary Shelley use the subtitle, *The Modern Prometheus*, for her book? Was Shelley's monster the same monster who is now as visible in contemporary popular culture?

More than a simple parable of a scientist gone mad, *Frankenstein* uses scientific themes as a framework for exploring larger political issues of power, responsibility, and justice in society. In interlocking stories, Mary Shelley transforms an ideal cherished by her and her circle—enlightenment through the attainment of knowledge—into a more complex examination of the good and the evil that may result when knowledge and power are used unwisely and for personal gain.

Shelley's classic novel begins and ends in the icy waters of the Far North. At the start of the novel, Victor Frankenstein has pursued his monster to the frozen Arctic, where he relates his strange tale to polar explorer Robert Walton. Frankenstein's creature was not born a monster. He began life as a rational being. Abandoned by his "father," Victor Frankenstein, the creature undertakes a process of self-education and a search for human connection. Alone, he learns to speak, read, and ponder his "accursed origins."

Only after he is denied human relationships and acceptance by society does he turn to rage, revenge, and murder. The tragedy of Victor Frankenstein is the result of his utter failure to take responsibility for his creation.

3B

3C *Mary Shelley's classic novel begins and ends in the icy waters of the Far North.*

3D

3E

3F

Frank 1

3G

Paradise Lost

3H

Hideous Progeny

3I

A Monstrous Mate

3J

Fire and Ice

Midnight Labors

Responsibility for Creation

Blasted Hopes

3K

PENETRATING THE SECRETS OF NATURE

3L

3M

3N

3O

Code numbers For Replacement Panels

THE AMERICAN LIBRARY ASSOCIATION
FRANKENSTEIN: PENETRATING THE SECRETS OF NATURE
PANEL 4 THE TRANSFORMATION OF A MONSTER

FRANKENSTEIN

4A

THE TRANSFORMATION OF A MONSTER

From its first appearance in 1818, Mary Shelley's *Frankenstein* both fascinated and repelled audiences. Her story, innovative, attractive, and often terrifying, who freely adapted the novel for audiences in England, America, and Europe. As early as 1823, and continuing into the next century, the monster underwent a transformation in which he lost much of the intelligence and emotional complexity Mary Shelley had given him. From a sensitive, reasoning, and articulate being whose crimes resulted from his mistreatment at the hands of humanity, the creature mutated into a grunting brute, whose violent and cruel nature inevitably he understood as the product of science daring to usurp the god-like power of creation. Almost as quickly, the name "Frankenstein" came to represent the monster as much as his maker. Although Mary Shelley's monster was nameless, many playwrights, writers, and the general public since then have called the monster "Frankenstein."

4F

Frank 1



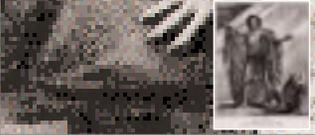
PENETRATING THE SECRETS OF NATURE

4K

4B



4G



4C



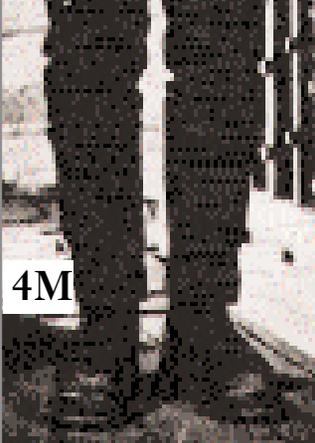
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4D



4I



4N



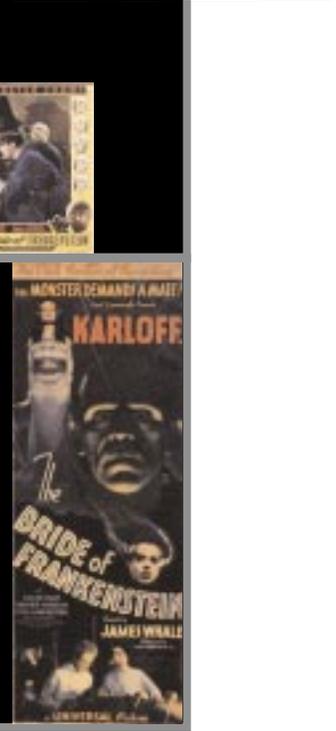
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4J



4O



Code numbers For Replacement Panels

THE AMERICAN LIBRARY ASSOCIATION
FRANKENSTEIN: PENETRATING THE SECRETS OF NATURE
PANEL 6 FRANKENSTEIN AND THE FRONTIERS OF SCIENCE



FRANKENSTEIN
6A

FRANKENSTEIN AND THE FRONTIERS OF SCIENCE

During the last decades of the twentieth century, the pace of biomedical innovation accelerated. Not to do the converse about society's ability to resist control of the dazzling new technologies that challenged our understanding of what it means to be human.

News reports of artificial hearts, the human genome project and genetic engineering, stem cell research, in vitro fertilization, and especially cloning have each fostered allusions to the Frankenstein myth.

The profound questions about human identity and scientific responsibility raised by these new technologies have prompted calls for public dialogue and expert guidance. In November 2001, President George W. Bush created a new ethics commission—The President's Council on Bioethics—to advise him and his staff on the ethical and policy issues that arise from biomedical innovations such as cloning and stem cell research.

The group and indeed all Americans face serious deliberation about these issues. Should stem cell research that shows promise against disorders such as Alzheimer's disease, juvenile diabetes, and Parkinson's disease, be limited? Who should determine the answers to these questions that challenge our understanding of the beginnings of human life and the ends of scientific discovery?

6F

6B



Crossing a Barrier

The Frank word *monster* designates the manipulation of organic life forms. In one sense it applies to humanly "engineered" or "manufactured" life, such as genetically altered patients, laboratory organisms, and new species in nature. Cloning of human embryos is another example of crossing that barrier. But some argue that crossing that species barrier represents a different category of "Frankenstein science." When the father identified the embryo as "Mary" (an acronym of his wife's name) in 1984, he called it "Frankie." "Frankie" was named and nurtured by medical students, as well as scientists. (Other agencies have since taken custody of the embryo.) Some argue that such an embryo is not a human. At the time, no one can truly predict whether stem cell research will become an accepted medical practice.

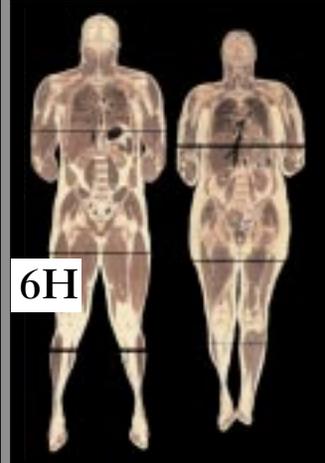
6G

"Secrets of Nature" Revealed

In 1993 a consortium of citizen and scientific organizations created the Human Genome Project, aimed at identifying all human genes and generating a complete sequence of human DNA by the year 2003. The initial sequencing of the human genome, such as the Human Genome Mapping, was completed in 2003 through the International Human Genome Project and later Genomica's private research consortium.

The decoding of the human genome provides hope for diagnosing, preventing, and treating diseases that have long plagued humankind. How does Mary Shelley's vision that the research will be used study—and that research will "show the whole earth but destroy the best" (Frankenstein)?

6C
"They may come up with a disease that can't be cured, even a monster."
Answer to Dr. Frankenstein's dream?



6H

6D

The Cloning Controversy

News reports in 1997 that Scottish scientists Ian Wilmut and colleagues cloned a sheep (Dolly) shocked the public and raised questions about the implications of the findings now attributed to humans. "Do you intend to do the same thing with humans?" asked the National Science Foundation. "What's the purpose?" asked the National Academy of Sciences. "Cloning embryos raise questions about the possibility of creating human embryos."

6I

"Frankenscience"

References to "Frankenstein" and "Frankenscience" now appear frequently in the media and on the Internet. "Frankenscience" connotes how science is practiced, especially in the areas of genetic engineering, cloning, stem cell research, and nanotechnology. Each year also influences environmental and health research centers, research groups, and programs.

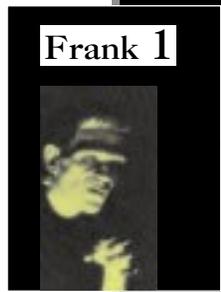
6E

Looking Forward

The scientific, scientific advances of the last decade have often raised ethical and policy questions. What, if any, are the connections between science and the creation of the monster? This should include the kinds of acceptable biomedical research?

6J

Shelley's vision of a creature other than that of a monster, created, beyond the pale of human nature, and the ethical questions to which they are relevant through science," followed by scientist Victor Frankenstein (and his responsibility for his creations) remains. Mary Shelley has the first creature of the Frankenstein possibility and human-made world.



PENETRATING THE SECRETS OF NATURE
6K



6L

The Visible Humans

In 1991, the National Library of Medicine created "The Visible Human Project" for the benefit of researchers and the public. Through the work of a pioneer who had donated his body to science and research, the Visible Human Project. Thousands of cross-sections of that body were photographed. This digital image was digitized and made available on the Internet through the Library's Web site, and others sites. The Visible Human has been used to teach anatomy, illustrate medical procedures, and create prostheses in several ways of technology.

6M



6N



6O